Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Digital Data Transmission Within	)	MM Docket No. 95-42
the Video Portion of Television	)	RM-7567
Broadcast Station Transmissions	)	

REPORT AND ORDER

Adopted: June 21, 1996 **Released: June 28, 1996**

By the Commission:

1. In the Notice of Proposed Rule Making (Notice) in this proceeding, we initiated an examination of the transmission of ancillary digital data inserted into the video portion of the standard NTSC[1] television signal.[2] Historically, we have not generally permitted licensees to transmit such ancillary signals, except by methods approved by the Commission. In this Report and Order, we are amending our rules to allow broadcast television licensees to use approved methods of such ancillary data transmission without prior Commission authorization, so that broadcasters will now be able to transmit ancillary information using "overscan" methods proposed by Yes! Entertainment Corporation (Yes!) and A.C. Nielsen Company (Nielsen), and the "sub-video" methods proposed by Digideck, Incorporated (Digideck) and WavePhore, Inc. (WavePhore). These methods, as well as a "signal substitution" method proposed by En Technology Corporation (En) will be further described below. We conclude that we do not have a basis for considering a government-approved standard for digital data at this time.

BACKGROUND

2. As discussed in the Notice, Section 73.646 of the Commission's Rules allows the transmission, without prior Commission consent, of ancillary telecommunications services within the Vertical Blanking Interval (VBI) of television broadcast signals.[3] The VBI spans from Line

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[1] NTSC is the acronym for the National Television Systems Committee, which developed the technical standards for the television broadcast system currently employed in the United States. *See* 47 C.F.R. §§ 73.681, 73.682.

[2] *See* Notice of Proposed Rule Making in MM Docket No. 95-42, 10 FCC Rcd 4918 (1995).

[3] An NTSC television picture consists of 525 lines, half transmitted during each of two interlaced fields. The VBI is the portion of the television broadcast signal that occurs at the beginning of each field. In the VBI, synchronizing pulses are transmitted and the electronic beam is turned off while it retraces from the bottom to

1 to Line 21 of each field, preceding the active video portion of the NTSC television signal. The Commission allows ancillary signals to be inserted on specific lines of the VBI, subject to the requirement of Section 73.682(a)(23) of the Commission's Rules that ancillary signals may cause no observable degradation to any portion of the station's visual or aural signals. In contrast to this permission for the use of the VBI, however, we have generally not allowed the transmission of ancillary telecommunications services within the video portion of broadcast television signals.[4] Instead, data transmission systems operating within the active video portion of the television picture have been reviewed and authorized on a case-by-case basis to ensure that they will not degrade the picture and not cause any interference. The intent of this policy has been to protect the public's ability to receive high-quality over-the-air video broadcast transmissions.

3. The Commission now has pending several requests for its approval of recently developed ancillary data transmission systems that use overscan and sub-video data insertion methods. Unrestricted approval for use of these systems is being sought so that TV station licensees can provide additional data services to the public without further authorization from the Commission.[5] Each of these overscan and sub-video systems, intended to be imperceptible to viewers, was discussed at length in the Notice,[6] and each raises unique technical issues. Further, they have substantially different data capacities and, as a result, are likely to have divergent purposes and markets.

4. Overscan. Ancillary data transmitting systems using the "overscan" method function by replacing the transmitted video signal with digitally encoded information in a small part of the picture not normally seen by viewers. Line 22, the first line of active video, has traditionally been used for this purpose[7] and Yes! proposes to use the extreme left edge of the picture similarly.[8] Depending on the particular encoding method, a video display of overscan data would look like either stationary and flickering, or moving black and white or colored dots or dashes. However, as these visible effects of data encoding are located at the extreme top or side of the TV picture, they are very seldom seen because all TV sets to some extent "overscan" the picture, covering the edges of the picture tube with the television cabinet to ensure that the visible portion

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information is transmitted during the VBI.

[4] Public Notice, FCC 70-387 (April 20, 1970), 22 FCC 2d 779 (1970).

[5] Notice at 4919-21.

[6] Notice at 4918, 19, 21.

[7] Use of line 22 was approved in 1985 for Telescan, Inc. and Ad Audit, Inc. for electronic verification of television broadcasts. Nielsen has been using line 22 since 1989, under temporary, conditional authority, to transmit the Nielsen Automated Measurement of Lineup (AMOL) system signal identification codes, and is seeking permanent authority for this use.

[8] Notice at 4921.

is completely filled with the picture.[9] Overscan systems are capable of providing only relatively low data rates, on the order of 15 to 20 kilobits per second (kbps).[10]

5. Sub-video. Unlike the overscan methods, which utilize isolated and non-visible portions of the television video, sub-video systems distribute the ancillary signals throughout the visible picture. The amplitudes of these signals are kept sufficiently low (or are confined to such a limited part of the normally emitted video spectrum bandwidth) that they are supposed to be imperceptible to the viewer. Sub-video systems are capable of relatively high data rates, on the order of 300 to 500 kbps.[11]

6. Two commenters, WavePhore and Digideck, have developed different sub-video systems. Both systems continue to be examined by the National Data Broadcasting Committee (the Committee), an entity formed in 1993 by the National Association of Broadcasters (NAB) and the Consumer Electronics Group of the Electronic Industries Association (CEG/EIA).[12] The Committee was formed to hasten the development of a voluntary national technical standard for high-speed data broadcasting using NTSC television signals as a delivery medium. In addition to filing individual comments, NAB and CEG/EIA also filed joint comments and submitted Committee reports.

AUTHORIZING ANCILLARY SERVICES

7. In the Notice, we recognized that these various technologies and the advances in uses of the spectrum that they would provide raise a number of issues on which we sought comment. The concern most fundamental to our analysis is the potential each of these systems may have for causing interference to other television signals and for degrading the quality of the picture transmitted by the host signal. Closely related to this issue is the question of the extent to which

[9] Without this standard overscan, the picture would appear with a narrow border.

[10] Such systems could provide a number and wide variety of services in addition to current program material identification, such as various low-speed computer data functions and signalling for interactive toys.

[11] Such high-speed uses include digital magazines, newspapers, books, catalogues, and audio materials, downloading computer software or financial data, and distributing business data to branch offices or clients.

[12] WavePhore's "TVT1/4" system transmits digital data on a subcarrier within the standard 6.0 MHz NTSC television signal, between 3.9 MHz and 4.2 MHz above the visual carrier frequency, using phase-shift keying (PSK) modulation inserted at an amplitude approximately 20 dB above the video noise floor. The TVT1/4 system was earlier designed and originally tested by the Committee with a net data rate of 384 kbps, but was recently configured at 300 kbps, and it is the latter mode of operation that is considered herein. Digideck's "D-Channel" system adds a constant carrier level, quadrature PSK (QPSK) data signal to the vestigial sideband (VSB) region of the NTSC video signal. The data carrier is placed 1 MHz below the picture carrier at a level between -30 and -36 dB relative to the video carrier at peak of sync. The net data rate of the "D-Channel" system tested by the Committee is 525 kbps.

the Commission should set performance standards or limitations, or rely on licensees to protect their own picture quality and avoid interference to other stations. Pursuant to this interest, we asked for information on the manner in which and extent to which broadcasters could and should maintain control over their signal and any insertion of data into it, and we sought information on what would happen if a broadcaster or other signal provider stripped out previously inserted data or substituted new data for previously inserted data. We also sought comment on the appropriate regulatory regime for any such data transmission, including whether such a determination should rest on the size or nature of the audience. We asked commenters how adaptable to future uses such systems are and whether we should reserve any portion of a system's capacity for particular uses or targeted audiences. Finally, we queried whether the proposed data transmission would slow the adoption of Digital Television technology by current television licensees.

8. In resolving these issues, we continue note that digital data transmission within the video portion of the television signal is a communications tool that can expand and enhance the use of the existing spectrum. As we indicated in the Notice, however, we should proceed with caution in authorizing new technology.[13] As several commenters argue, these technologies have great potential to increase the use of the spectrum to provide business and consumers with a variety of useful services, and decisions regarding when, whether and what standards to impose can have a great beneficial or limiting effect on this potential. With this caution in mind and on the basis of the record before us, we believe that we can approve the use of the Yes!, Nielsen, Digideck and WavePhore signal transmission systems, as presented in this proceeding, by all television broadcast stations (including low power TV stations) without compromising the essential integrity of the delivered NTSC television picture or permitting any other harmful effects on the television viewing public. These uses will permit a wide variety of communications services useful and valuable to the public and to industry, while providing an additional revenue source to broadcast television stations.

9. We do not believe that authorizing these systems now is inconsistent with others' ongoing efforts to develop a coherent national standard recommendation for certain data services. Further, we see no potential negative impact on the introduction of Digital Television technology that would affect this decision at this time. Broadcasters could gain a level of experience with the business of digital data transmission that could help them in a world in which they transmit exclusively using digital technology. In addition, the revenue earned by the stations could help provide them with funds to develop and implement digital television facilities.

10. We note that the Association for Maximum Service Television, Inc. (MSTV) states that the Committee has not yet made conclusive findings regarding interference to co- and adjacent-channel DTV stations. Thus, it claims that the Commission or the proponent of a particular

[13] *See* Notice at 4921.

system must undertake additional testing on this matter.[14] However, MSTV has presented no persuasive information suggesting that such interference is likely to occur. Moreover, these services are provided on an ancillary basis and if they do interfere, they will have to be modified or cease being used. The proponents of these data insertion systems should take necessary measures to ensure that broadcasters have the ability to comply with this requirement.

AUTHORIZATION OF SPECIFIC SYSTEMS

11. The successful and problem-free operation of previous overscan systems verifies the inherently innocuous nature of their use, as presented in the technical data submitted by Yes! and argued in the comments, and prompts us to approve the use of the Yes! system and to grant permanent authority to Nielsen for its Automated Measurement of Lineup system to be used on line 22 on a non-exclusive basis. Further, we do not see a need at this time to set a technical standard or sharing criteria for Line 22 overscan systems. Nielsen's comments argued convincingly against such standards, and nothing in the record of this proceeding persuasively rebuts those arguments. While there has been concern in the past over the potential for conflict in the use of line 22, those compatibility concerns appear to have been resolved.[15] Because of the pace of technological development, it is quite plausible that new systems will be developed that would be more efficient than the one currently being used. Accordingly, no overscan standards will be adopted here.

12. With regard to the sub-video systems, it appears that they also can operate as proposed without increasing the host station's potential for causing interference or causing material degradation of the picture. While Digideck's system operates near the lower edge of the television channel spectrum, which initially raised a concern about the possibility of interference to the lower adjacent channel, the WavePhore system uses techniques that we believe will not affect the station's potential for causing interference. Moreover we have reviewed the Committee's report attached to the joint NAB & CEG/EIA comments, which concludes that "neither WavePhore nor Digideck would cause any more adjacent channel interference to other services or TV stations than a normal TV transmission meeting the FCC requirements,"[16] and we have no information or other indication to the contrary. Similarly, the Committee's report

[14] MSTV comments at 3.

[15] Before the release of the Notice in this proceeding, Airtrax (the proponent of a commercial and program identification system using line 22) filed a petition for rule making (RM-7567), requesting the Commission to set standards for the use of line 22. Airtrax sought to prevent one entity's system from precluding other users from access to line 22 at individual TV broadcast stations, and it specifically expressed concern over the compatibility of its system with the AMOL system that Nielsen was proposing. As the latter has been implemented and the Commission has not received any information from Airtrax or others indicating actual conflicts, and as neither Airtrax nor any similarly situated company has filed comments in response to the Notice in this proceeding, the Airtrax petition for rule making will be dismissed herein.

[16] Joint NAB & CEG/EIA comments, Appendix B at 3.

indicated that neither system should cause material picture degradation,[17] and field testing has been proposed for both systems. Our review of the testing procedures persuades us that they should effectively predict real world results. We emphasize that our approval of the use of these systems is based on the favorable results of laboratory testing, on our expectation that they will perform in the real world essentially as predicted by the testing, and on our continued reliance on broadcasters to continue to exercise full technical control over their signals and to be responsible for operating in a manner that does not increase their stations' potential for causing interference or degrading picture quality, as further discussed below.

13. The primary objection to these systems was raised by parties that urge us to adopt specific technical standards for such ancillary uses of the television signal. Their concerns encompass picture integrity and interference, as well as an interest in industry standardization in order to promote market stimulation and widespread use of digital data insertion in television signals. As stated above, however, the evidence before us persuades us that picture integrity and interference protection are not compromised by these systems, and if they are, licensees will have the responsibility to correct such problems or modify or cease the use of any offending system.

14. While industry standardization often eases the introduction of new technology, reduces consumer risk, and enhances competition, thereby benefiting both industry and consumers, these benefits are often appropriately achieved by standards voluntarily developed and adopted by industry. We do not have a basis for considering a government-adopted national sub-video standard at this time, and we agree with those parties that do not see sufficient justification to delay the deployment of the systems now before us in order to set a mandatory standard or standards. We note first that the Committee is only considering the two sub-video technologies we described in the Notice. Further, while the comments also suggested that the Committee's process would be completed during the second quarter of 1996, field testing that was scheduled for completion in December, 1995 has not yet been conducted. Comments and press reports also reflect major differences between the two competing proponents, which may result in further delay in the Committee's concluding its work. Significantly, it appears that the ancillary signals from the systems considered and approved in this Order will be directed, at least initially, either to subscribers of a particular service or to viewers who have purchased special equipment to receive the signals.[18] Even commenting parties that support standards agree that there is less need for standards in "closed system" conditions. Should more general-consumer oriented services be developed in the future, we can reexamine the issue of standards in that context. Accordingly, we believe we should limit our actions at this time to approving the systems now before us. We encourage the Committee to continue its effort to seek an industry consensus on the use of sub-video technology to provide services to the general public.

15. Our decision to approve the use of these systems is based on our reliance, proposed in

[17] Id. at Appendix B, at 5, 13

[18] *See, e.g.*, WavePhore comments, p. 14.

the Notice, supported by parties, and strongly reiterated here, on each broadcast licensee's ultimate responsibility for the proper technical operation of its facility, and nothing herein modifies that responsibility. We also stress here that both Congress and the Commission have noted the substantial government interest in ensuring access to broadcast television by people with hearing and visual disabilities.[19] Consistent with the apparent desires of Congress as reflected in Section 305 of the Telecommunications Act of 1996, we will require that data insertion systems protect the integrity of closed captioning signals on line 21. The need for these systems to also protect any closed captioning or video description signals, or other similarly intended enhancements for persons with disabilities that the Commission may specify or may want to protect in the future, will be included in consideration of any rules adopted to implement such enhancements. Any data insertion must be accomplished in a manner that leaves the licensee with the capability to modify, reduce, or eliminate the data insertion if necessary to terminate any interference caused, or to restore the quality of a degraded picture.[20]

LICENSEES' RIGHTS AND OBLIGATIONS

16. Generally, each licensee must also retain ultimate control over the content of any inserted data in order to meet its statutory obligation to exercise full editorial and technical responsibility over all matters involving the operation of the station.[21] However, consistent with the current VBI telecommunications service rules, ancillary services that are common carrier in nature and provided over broadcast signals will be subject to common carrier regulation. As a result, as with common carriers in general, broadcasters will be prohibited from exercising control over the content of this type of ancillary transmission. Otherwise, the broadcaster must retain the ability to remove ancillary information from the signal when it deems necessary.

17. Ancillary signals are a means of raising station revenues and, like telecommunications services on the VBI, will be considered an elective service.[22] In many respects, we see no reason to treat VBI and non-VBI ancillary signals differently. Therefore, we shall extend the series of

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[19] Section 305 of the Telecommunications Act of 1996 (Telecom Act) adds Section 713(b) to the Communications Act, which directs the Commission to conduct a proceeding to prescribe regulations that will ensure that video programming is made fully accessible to people with disabilities through the provision of closed captions. In addition, new Section 713(f) of the Communications Act directs the Commission to assess how to ensure the accessibility of video programming to people with visual disabilities and to report to Congress on its findings. Section 305 of the Telecommunications Act of 1996, P.L. 104-104, 110 Stat. 56 (1996); *see* Notice of Inquiry in MM Docket No. 95-176, 11 FCC Rcd 4912 (1995); Order in MM Docket No. 95-176, FCC 96-71, released February 27, 1996.

[20] Our rules require such retention of control in analogous situations, including Section 73.646(d) for VBI transmissions and Sections 73.667(e) and 73.669(c) for television subsidiary communication services.

[21] *See, e.g.*, Trustees of the University of Pennsylvania, 69 FCC 2d 1394, 1396 (1978); Fresno FM Limited Partnership, 68 RR 2d 1645, 1647-48 (Rev. Bd. 1991).

[22] 47 C.F.R. § 73.646(b).

rules addressing ancillary VBI transmissions[23] to include ancillary signals within the video portion of the signal. Ancillary VBI transmissions may be analog or digital,[24] and they can be used to provide broadcast, point-to-point, or point-to-multipoint services.[25] Services that are common carrier in nature are subject to common carrier regulation. Licensees that desire to operate in a common carrier mode must apply to the Commission for the appropriate authorization and comply with all policies and rules applicable to the particular service, including the prohibition against controlling transmission content.[26] We now extend these rules to apply to ancillary transmissions within the video portion of the NTSC television broadcast signal.

18. Section 3(6) of the Communications Act of 1934, as amended, defines broadcasting as "the dissemination of radio communications intended to be received by the public, directly or by the intermediary of relay stations."[27] The Commission has determined that signals which are intended for an audience needing special equipment or who must subscribe to the service do not constitute "broadcasting" as defined in the Communications Act.[28] Thus, to the extent that ancillary signals are not intended for the general public, we will not consider them as broadcasting for the purposes of our rules. For example, the rule addressing the lowest unit charge for political candidates will not apply to these transmissions. We note that this framework parallels that which we apply to ancillary transmissions within the VBI.[29] At the same time, however, if significant public interest uses of this ancillary transmission technology suggest themselves, the Commission of course may consider means by which to advance or ensure such usage of the broadcast spectrum.

MISCELLANEOUS ISSUES

19. In its initial comments on WavePhore's request, Radio Telecom and Technology, Inc. (RT&T) raised a question of whether a licensee may alter the basic waveform of its broadcast signal by using a filter to eliminate some video information, as required by the WavePhore

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[23] 47 C.F.R. § 73.646(a) - (f).

[24] 47 C.F.R. § 73.646(a).

[25] 47 C.F.R. § 73.646(b).

[26] 47 C.F.R. § 73.646(c).

[27] 47 U.S.C. § 153(6).

[28] Report and Order in Gen. Docket 85-305, 2 FCC Rcd 1001 (1987) (Subscription Television), aff'd sub nom. National Association For Better Broadcasting v. FCC, 849 F.2d 665 (D.C. Cir. 1988), requests for rehearing and rehearing en banc denied, August 31, 1988 and February 16, 1989, recon. denied in part and dismissed in part, 4 FCC Rcd 4948 (1989).

[29] 47 C.F.R. § 73.646(b).

system, consistent with existing rules.[30] RT&T specifically refers to Section 73.682 and Figures 5 and 5A of Section 73.699 of our Rules. However, Section 73.687 formerly contained tolerance limits relative to Figure 5 of Section 73.699 for visual transmission system performance within the authorized channel until that requirement was deleted for most stations in 1984.[31] The remaining "tolerance" requirements only cover TV stations operating on channels 15 to 69 and employing a transmitter delivering maximum peak visual power output of 1 kilowatt or less. Few full service TV stations operating on these channels use transmitter power this low. Therefore, essentially all TV stations operate without an express limit on how far from ideal their in-channel transmitter performance can be. Those stations with a tolerance may depart as necessary to use any approved digital data insertion system. Broadcast licensees are allowed to process their video signals as they find appropriate. While we are concerned that systems that modify the transmitted TV waveform can increase the potential of the station causing objectionable interference, we will consider for approval any such system that demonstrates this concern to be unfounded (as has been done here with respect to the Digideck and WavePhore systems).

20. Comsat expresses concern about sub-video data insertion causing problems where analog video is converted to digital video for program distribution, which may also be a concern for possible future consumer digital VCRs. Concern is expressed that the use of sub-video technologies may cause signal quantization errors that could result in picture degradation and that coding efficiency associated with motion estimation could also be adversely affected. We encourage any program suppliers wishing to insert sub-video data and digital VCR designers that expect to include an ability to digitally record an NTSC input signal to consider the concerns raised by Comsat. We believe that if significant problems arise in digital VCR performance due to data-encoded video, then broadcasters may elect to discontinue the service or consumers may reject digital VCRs. At this time we believe that data insertion will occur principally at the local level, but if it is to occur on a national basis, the parties wishing to insert digital data at a single source or to accommodate the distribution of such enhanced signals will have to resolve these concerns. In both situations, the industry participants have sufficient interest and the greatest expertise to resolve these issues, and in neither case do we see a specific role for this Commission to play at this point.

21. RT&T seeks to include its "reverse VBI" technology in this proceeding. RT&T's system involves transmissions from viewers' homes on TV channels, but synchronized to correspond to a TV broadcast station's VBI in order to avoid interference. Because we are only addressing NTSC TV station transmissions in this proceeding, the RT&T proposal is beyond the proper scope of our consideration here and will not be included.

22. One commenting party, En, has submitted information regarding its "Malachi" system, capable of a high data rate like the sub-video systems, that is similar in many ways to the other

[30] *See* Notice at 4919.

[31] *See* Report and Order in Gen. Docket No. 83-114, 99 FCC 2d 903 (1984).

technologies, but with certain notable and possibly significant differences.[32] These differences are sufficient to warrant separate examination of the En system as a third method of data insertion, which we will refer to as signal substitution technology. Comments filed by En describe a system that is roughly similar to overscan, except that while overscan systems replace such small portions of the picture so as to remain invisible, the Malachi system would typically replace many lines, or portions of lines, and thus be quite perceptible to the viewer. It differs from sub-video by actually replacing lines of the active video signal, rather than simply adding data to them. The data would appear on the television screen as a rectangle of "snow" that would always have to touch the left side of the screen, and the size of which would depend on the data transmission rate. Typically, according to En, the rectangle would appear as a strip across the bottom of the screen, and it would not affect the audio portion of the programming.

23. Such a system, which involves absolute elimination of some part of the picture (or a reduction in the amount of the screen given to a video picture) and could, presumably, completely replace the entire picture, raises additional issues regarding spectrum allocation and use that have not been addressed in this proceeding. Moreover, we have only sketchy technical information on how this system would operate. For instance, En has not explained the proposed scope of its system's implementation, including any proposed limit on the percentage of the picture to be replaced by data. The replacement of the entire picture is not ruled out. Such a significant policy change would appear to go far beyond the scope of the operational flexibility we proposed in the Notice. Therefore, prior to our consideration of En's system, En must submit a proposal for approval so that these and any other issues raised by its proposed system can be fully addressed by the Commission, broadcasters, potential users, and the public. Alternatively, En could test its system at specific stations that request authority to operate on an experimental basis. Such requests for experimental authority should include the technical information necessary for us to evaluate the system's operation.

CONCLUSION

24. In light of recent innovations and developments in telecommunications technology, we are now able to expand and enhance the potential uses of the existing spectrum. Accordingly, we have reexamined our policy towards the transmission of ancillary signals within the video portion of the standard NTSC television signal, which we have traditionally prohibited. Methods have recently been developed that will allow television broadcast licensees to insert digital data into the video portion of the signal without causing significant picture degradation or interference, thereby allowing licensees to provide a wide variety of ancillary services. These services will help licensees raise revenue, which we anticipate will in turn allow them to provide greater public interest broadcast services to their communities of license. We also expect the provision of these

[32] En describes its system as linking a viewer's television and personal computer (PC). During a broadcast television program, data that would usually be program-related would be downloaded into the PC, to which En's equipment would have to be connected. According to En, viewers who already had a PC and a television would pay less than $100 for En's equipment, and there would be no subscription fee for receipt of the ancillary transmissions.

ancillary services to expand and improve the products and services available to businesses and consumers within a television station's service area.

ADMINISTRATIVE MATTERS

25. A Final Regulatory Flexibility Analysis is set forth in Appendix B.

ORDERING CLAUSES

26. Therefore, IT IS ORDERED THAT, pursuant to Sections 4(i) and 303(r) of the Communications Act of 1934, as amended, that Part 73 of the Commission' Rules and Regulations IS AMENDED as set forth in Appendix A, effective upon publication in the Federal Register.[33]

27. IT IS FURTHER ORDERED THAT the requests of A.C. Nielsen Company and Yes! Entertainment Corporation for the Commission to allow television broadcast licensees to use their respective overscan ancillary data transmission systems without prior Commission authorization ARE GRANTED to the extent indicated above, and in all other aspects ARE DENIED.

28. IT IS FURTHER ORDERED THAT the requests of WavePhore, Inc. and Digideck, Inc. for the Commission to allow television broadcast licensees to use their respective sub-video ancillary data transmission systems without prior Commission authorization ARE GRANTED to the extent indicated above, and in all other aspects ARE DENIED.

29. IT IS FURTHER ORDERED THAT the Petition for Rule Making filed by Airtrax IS DISMISSED.

30. Further information on this matter may be obtained from Gordon Godfrey, Paul Gordon, or Jim McNally, (202) 418-2120.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton
Acting Secretary

[33] These rule changes relieve a restriction on the use of the active video portion of television transmissions, and thus can be made effective immediately. 5 U.S.C. § 553(d)(1).

APPENDIX A

Title 47 of the Code of Federal Regulations Part 73 is amended as follows:

1. The authority citation for Part 73 continues to read as follows:

Authority: 47 U.S.C. 154, 303, 334.

2. Section 73.621 is amended by revising paragraph (f) to read as follows:

§73.621 Noncommercial educational TV stations.

* * * * *

(f) Telecommunications Service on the Vertical Blanking Interval and in the Visual Signal. The provisions governing VBI and visual signal telecommunications service in §73.646 are applicable to noncommercial educational TV stations.

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3. Section 73.646 is amended by revising the heading and paragraphs (a), (b), (d), (e) and (f) to read as follows:

§73.646 Telecommunications Service on the Vertical Blanking Interval and in the Visual Signal.

(a) Telecommunications services permitted on the vertical blanking interval (VBI) and in the visual signal include the transmission of data, processed information, or any other communication in either a digital or analog mode.

(b) Telecommunications service on the VBI and in the visual signal is of an ancillary nature and as such is an elective, subsidiary activity. No service guidelines, limitations, or performance standards are applied to it. The kinds of service that may be provided include, but are not limited to, teletext, paging, computer software and bulk data distribution, and aural messages. Such services may be provided on a broadcast, point-to-point, or point to multipoint basis.

* * * * *

(d) Television licensees are authorized to lease their VBI and visual signal telecommunications facilities to outside parties. In all arrangements entered into with outside parties affecting telecommunications service operation, the licensee or permittee must retain control over all material transmitted in a broadcast mode via the station's facilities, with the right to reject any material that it deems inappropriate or undesirable. The licensee or permittee is also responsible

for all aspects of technical operation involving such telecommunications services.

(e) The grant or renewal of a TV station license or permit will not be furthered or promoted by proposed or past VBI or visual signal telecommunications service operation; the licensee must establish that its broadcast operation serves the public interest wholly apart from such telecommunications service activities. (Violation of rules applicable to VBI and visual signal telecommunications services could, of course, reflect on a licensee's qualifications to hold its license or permit.)

(f) TV broadcast stations are authorized to transmit VBI and visual telecommunications service signals during any time period, including portions of the day when normal programming is not broadcast. Such transmissions must be in accordance with the technical provisions of §73.682.

4. Section 73.682 is amended by adding paragraph (a)(24) to read as follows:

§73.682 TV transmission standards.

(a) Transmission standards.

* * * * *

(24) Licensees and permittees of TV broadcast and low power TV stations may insert non-video data into the active video portion of their TV transmission, subject to certain conditions:
(i) The active video portion of the visual signal begins with line 22 and continues through the end of each field, except it does not include that portion of each line devoted to horizontal blanking. Figures 6 and 7 of §73.699 identify the numbered line referre to in this paragraph.

(ii) Inserted non-video data may be used for the purpose of transmitting a telecommunications service in accordance with §73.646. In addition to a telecommunications service, non-video data can be used to enhance the station's broadcast program service or for purposes related to station operations. Signals relating to the operation of TV stations include, but are not limited to program or source identification, relay of broadcast materials to other stations, remote cueing and order messages, and control and telemetry signals for the transmitting system.

(iii) A station may only use systems for inserting non-video information that have been approved in advance by the Commission. The criteria for advance approval of systems are as follows:

(A) The use of such signals shall not result in significant degradation to any portion of the visual, aural, or program-related data (closed captioning) signals of the television broadcast station.

(B) No increase in width of the television broadcast channel (6 MHz) is permitted. Emissions outside the authorized television channel must not exceed the limitations given in §73.687(e). Interference to reception of television service either of co-channel or adjacent channel stations

must not increase over that resulting from the transmission of programming without inserted data.

(C) Where required, system receiving or decoding devices must meet the TV interface device provisions of Part 15, Subpart H of this chapter.

(iv) No protection from interference of any kind will be afforded to reception of inserted non-video data.

(v) Upon request by an authorized representative of the Commission, the licensee of a TV station transmitting encoded programming must make available a receiving decoder to the Commission to carry out its regulatory responsibilities.

* * * * *

5. Section 73.1207 is amended by revising paragraph (b)(2) to read as follows:

§73.1207 Rebroadcasts.

* * * * *

(b) * * *

(2) Permission must be obtained from the originating station to rebroadcast any subsidiary communications transmitted by means of a multiplex subcarrier or telecommunications service on the vertical blanking interval or in the visual signal of a television signal.

* * * * *

6. Section 73.3613 is amended by revising paragraph (e) to read as follows:

§73.3613 Filing of contracts.

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(e) The following contracts, agreements or understandings need not be filed but shall be kept at the station and made available for inspection upon request by the FCC: contracts relating to the sale of television broadcast time to "time brokers" for resale; subchannel leasing agreements for Subsidiary Communications Authorization operation; franchise/leasing agreements for operation of telecommunications services on the TV vertical blanking interval and in the visual signal; time sales contracts with the same sponsor for 4 or more hours per day, except where the length of the events (such as athletic contests, musical programs and special events) broadcast pursuant to the contract is not under control of the station; and contracts with chief operators.

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APPENDIX B

Final Regulatory Flexibility Act Analysis

I. Reason for Action

In recent years, several new methods of embedding data within television video signals have been developed. These methods degrade television video by varying degrees, but only one of the methods is by design intended to be perceived by viewers. The Commission is acting to provide for such services that do not significantly degrade the television picture because it believes its broadcast licensees have the qualifications and experience to determine which of the new systems are maximally compatible with their primary broadcast obligations and may yet be used to provide additional information services to segments of the public. The action taken herein provides an interim standard for the use of the above-described data transmission technologies and is intended to benefit broadcasters and the generally small entities which are believed to be the most likely providers of ancillary data services.

II. Public Comments in Response to Initial Regulatory Flexibility Analysis None.

III. Description, Potential Impact and Number of Small Entities Affected

Many broadcasters are considered to be small business entities. Thus, several thousand licensees of television broadcast facilities of all types (commercial and educational VHF and UHF stations, translators, boosters and Low Power TV stations) could benefit from the rule amendments herein adopted. Most providers of the data services envisioned herein are also expected to fall within the classification of a "small business entity," at least initially. Their number is unknown, but may amount to anywhere from a few to several hundred over the next few years.

IV. Recording, Record Keeping and Other Compliance Requirements

No new record-keeping or compliance requirements are imposed by the new rules.

V. Any Significant Alternative Minimizing Impact on Small Entities and Consistent with the Stated Objectives

None.